Summary of potential impacts of the December '05 MPA packages on commercial and recreational fisheries in the Central Coast Study Region

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Astrid Scholz, ajscholz@ecotrust.org, Mike Mertens, Charles Steinback

Introduction

Using data layers characterizing the extent and relative value of fishing grounds of19 commercial fisheries in the Central Coast Study Area (SA) previously transmitted by Ecotrust to the Marine Life Protection Act Initiative (MLPAI) under the terms of contract agreement No. 2005-0067, and data on the extent and intensity of 2 recreational fisheries conducted in the CCSR made available to Ecotrust by the California Department of Fish and Game (CDFG), we analyzed the potential effects of the MPA packages under consideration by the MLPAI since December 2005.

The following fisheries were considered in this analysis:

Commercial	Recreational
Anchovy	n/a
Cabezon	n/a
Dungeness crab	n/a
Halibut	n/a
Kelp Greenling	n/a
Lingcod	n/a
Mackerel	n/a
Deep Nearshore Rockfish	Rockfish
Rockfish Nearshore	
Rockfish Shelf	
Rockfish Slope	
Rock Crab	n/a
Salmon	Salmon
Sardine	n/a
Sablefish	n/a
White Seabass	n/a
Surfperch	n/a
Spot Prawn	n/a
Squid	n/a

Approach

The four MPA network proposals under review vary according to their spatial extent and the commercial and recreational fishing uses they affect. Specifically, they vary by the number and types of fisheries permitted within the boundaries of particular MPAs within a network. Furthermore, study area (SA) fisheries themselves vary in spatial extent and frequently overlap. Since any one MPA may have different effects on different uses, and different uses may be affected differently by all MPAs, it is therefore necessary to consider single MPAs and single fishery uses independently.

We conducted an overlay of each MPA with each potential use. MPAs were grouped according to level of protection, as specified in the January 10th draft of the "Rationale for SAT

categorization of MPAs by relative levels of protection" (ProtectionLevels_draft_10Jan06.doc), but uses were considered individually.

We quantified the first order maximum effects of proposed MPAs on both commercial and recreational fishing, analyzing the percent of total fishing grounds for any one fishery included in a given MPA. We compiled results in a series of spreadsheets transmitted to the MPLAI and Science Advisory Team, summarizing the effects of the various MPA packages on commercial and recreational fisheries both in terms of the area affected and the relative value lost. For the purposes of this analysis, value was measured as an index of relative importance derived from interviews with fishermen in the case of the commercial fisheries, and in terms of angler-days in the case of the recreational fisheries.

For this first order evaluation, we assumed that all fishing in an area intersected by MPAs and fishing grounds would be affected. Where an MPA straddled a reporting block in the recreational data, we apportioned the angler-days associated with that block proportional to the area overlap. It is important to note that the analysis specifically does not constitute an economic impact analysis, nor account for behavioral responses such as shifts in fishing effort to other areas.

The percent of area and value affected was calculated based on the grounds identified within the Central Coast region, not for the whole state

Assessing MPA packages

The percent change in area and value for each of the commercial fisheries were determined by the intersection of each MPA package and the fishing grounds specific to that use. Each MPA within a package was classified by whether it would affect the fishery or not. If a fishery was affected by an MPA, the area and value were summarized and then divided by the total area and value for the entire fishing grounds (G), as derived from interviews with fishermen, and the total study area (SA).

The total percent of the area and value affected for both the total fishing grounds and the grounds inside the study area was then summarized for all MPAs that affected each fishery per package.

Packages vary considerably in their effects.